

# The Impact of Foreign Direct Investment on the Development of the Stock Market: The Case of Germany

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## Abstract

The essence of this study is to objectively evaluate in what way foreign direct investment influences the growth of Germany's stock market and to establish whether or not they are related in some way. The main emphasis is on foreign direct investment's (FDI) contribution to the development of the German stock market of major significance. Considering the relationship of FDI, domestic savings and the foreign exchange rate on Germany's soaring stock markets, we will look at the connection between foreign direct investment and inflation. We used the Auto Regressive Distributive Lag model with the bound testing to capture both the short and long-run co-integration dynamics of the links taking into consideration the yearly time series data from 1980 to 2019. The complement hypothesis, which states that there exists a connection between foreign direct investment and stock market development, is proven in the short-run. Over the long-run, foreign direct investment (FDI) has a significant impact on stock market development in Germany. In other words, empirical data shows that FDI and market capitalization have a significant positive connection over time. This indicates that FDI has connection with the expansion of the German stock market. In the near term, there is relationship between FDI and stock market development. Because FDI contributes to stock market development, the German government should work to attract FDI by taking a variety of measures, such as ensuring political stability in the country, providing adequate infrastructure, minimizing volatility of foreign exchange and interest rates through appropriate and effective monetary policy, providing incentives such as tax breaks, and improving infrastructure in Germany, among other things.

**Keywords:** Market capitalization; Foreign direct investment; Germany; Inflation

## Introduction

A robust financial system is often seen as essential for the growth and stability of every economy. The financial structure of the economy is influenced by the stock market, which is a component that is worth pointing out. It is a method of funding a new company that is based on anticipated profit margins and returns. The stock market provides an indication of a country's economic growth. For the development of a nation's stock market, as well as, investment, saving and economic growth, it is necessary to ensure long-term prosperity for a country. Based on studies of theoretical finance, improvements in the economy may be linked to growth in the stock market. Investment in which foreign owners have the ability to affect the conduct of the companies in which they invest is referred to as Foreign Direct Investment (FDI) in the United States. One of

the primary drivers of foreign direct investment is the globalization of production and competition. The transfer of some manufacturing operations to more lucrative areas is the second cause for this trend. Labor-intensive manufacturing in industrialized nations has mostly been outsourced to developing countries, where wages are lower and working conditions more favorable. Many (if not all) of today's poor nations will be unable to achieve sustained and rapid development unless they receive significant foreign direct investment (FDI) from foreign-owned multinational companies. Without foreign direct investment, it would be difficult to transfer technologies and build worldwide networks. Since the mid-1990s, the financial and political sectors have grown substantially, with both stock and bond markets becoming bigger in both the developed and developing worlds. To attract more FDI, the majority of nations have changed their regulations and

**Received date:** 06 December 2025; **Accepted date:** 11 December 2025; **Published date:** 20 December 2025

**Citation:** Seraj M, Conteh K (2025) The Impact of Foreign Direct Investment on the Development of the Stock Market: The Case of Germany. SunText Rev Econ Bus 6(3): 237.

**DOI:** <https://doi.org/10.51737/2766-4775.2025.137>

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strengthened their economies by privatizing their state-owned companies, conducting financial reforms, opening up their capital markets, and providing tax incentives and subsidies, amongst other measures. More than trading or even listing stocks on a local level, many emerging nations would benefit more from preserving strong foundations and attracting foreign direct investment (FDI). Stock exchanges were also created to make it easier for people to transfer money to investment companies.

A strong financial system is important for a country's financial growth and success, and the stock market is a critical and basic component of the country's economic development and prosperity. In addition to identifying and promoting viable companies that will contribute to long-term economic development, a well-managed stock market promotes investment by lowering the cost of capital. Future economic activity may be predicted most accurately by stock markets, and stock market stability is an indication of a nation's overall economic strength. It is essential for a country's economic success that its stock market continues to expand. In Germany, there are eight stock exchanges, each of which is situated in a different part of the nation. All of these stock exchanges have enormous power and influence in the global economy. The German economy, while being the most developed in Europe, is the third most developed in the world, behind only the United States and Japan. Germany has been named the world's leading exporter of goods by the World Trade Organization, which includes exports to countries outside the European Union. According to purchasing power parity, Germany is ranked sixth in the world in terms of purchasing power. This has resulted in the German Stock Exchange becoming one of the most important stock markets in deciding worldwide trade and business, which should come as no surprise. The latest recent figure for the market capitalization of publicly traded domestic companies in Germany (measured in current US dollars) was 1,755,170,000,000 (in current US dollars). This indicator's value fluctuated between 2,262,220,000,000 in 2017 and 51,400,310,000 in 1975 during the previous 43 years, with the highest value occurring in 2017.

In 2018, the market capitalization of publicly traded domestic businesses in Germany accounted for 44.46 percent of gross domestic product (GDP). Over the previous 43 years, it reached a high of 65.37 percent in 2000 and a low of 7.55 percent in 1980, reaching a maximum of 65.37 percent in 2000. The inflows of foreign capital may help the expansion of the stock market in a number of ways. First of all, in order to better understand why this happened, it is imperative to identify which particular factor may have led to the stock market rally. A major contributing factor is foreign capital inflows into local companies. Because when this happens, companies become more valuable and can sustainably invest more in their respective stocks. The way this flow is shown here is that it affects stocks by strengthening their capital structure

and making the market more official, and in turn, boosting corporate profits, which ultimately has an effect on the overall market value. The increasing significance of financial markets across the globe has contributed to the widespread belief that "finance" is a critical component of economic development. As a consequence, expansion of the stock market and economic growth have remained the primary focus. The stock market, as a basic pillar of a country's economy, plays a vital role in the development of industry and commerce, both of which have a major impact on the overall growth of the country's economy. This is why corporate organizations, government consultants, and even the country's central bank keep a close eye on the operations of the stock market. Finally, research has shown a positive connection between FDI, remittances, and economic development, Gui-Diby, and Iamsiraroja and Ulubaşolu and the growth of an economy. Positive economic growth implies a rise in company profitability, which raises the worth of corporations and aids in the expansion of stock markets. In other words, there is a bi-directional causal connection between the development of the stock market and the expansion of the economy, and the two indicators mutually reinforce one another. The influx of foreign capital, on the other hand, helps to raise the quantity of money in the economy, which helps to boost financial intermediation via the use of financial market infrastructure. International capital flows are growing because countries have gotten better at creating institutional environments where investors feel protected and have started to devote themselves to things like growing the stock market. This new effort and focus on improving the economy are strongly supported by academic research.

Both investors and members of the financial sector consider the stock market to be historic. According to Levine and Zervos, some metrics may be used to gauge the development of stock markets, and as a result, they have a direct connection with the growth of the economy of the nation in which they are employed. Liquidity, stock market capitalization, and stock market turnover are only a few of the characteristics that exist. FDI is important to most developing nations since it improves competitive business environments in countries around the globe via the mix of money, technology, managerial competence, human capital development, and an expansion of the economy. The economic study of the function of FDI in economic growth, on the other hand, is disputed. The presence of FDI in a country is beneficial on two counts. Its main benefit is that it supplies the nation with the knowledge and resources they need to succeed. Trade, price, financial, and other inefficiencies already in place, on the other hand, will impede resource allocation and limit economic development in the long run, Brecher and Diaz-Alejandro, Brecher, Boyd and Smith. Inflation-adjusted FDI is a significant source of capital inflows into developing countries. The transfer of managerial skills, technology

and human resources to the host nation is made possible via FDI. The goal of this study is to determine whether or not FDI has an impact German's stock exchange development. A major impact of foreign direct investment (FDI) flows is the mutual desire among countries to exchange technology and knowledge, which results in increased efficiency and a better-trained workforce. It also provides an opportunity for the receiving nation to promote its products and services on a global level. The inflow of foreign direct investment (FDI) is also a major source of financing for developing countries (OECD, 2008). A significant increase in FDI into the global economy, particularly Germany, has resulted from this development. The main goal of this investigation is to establish whether or not the European Union has had an impact on German's stock market development. There is a triangular connection between foreign direct investment, stock market development, and economic growth: (1) FDI supports economic growth, (2) economic growth encourages stock market development, and (3) FDI indirectly benefits stock market development (Figure 1).

Germany's net FDI inflows, GDP, stock market capitalization, exchange rate, and real effect inflation rate was all shown in the Figure 1 from 1980 to 2019. The research will uncover the critical factors that have caused the German stock market to advance, with an emphasis on how foreign direct investment has influenced the process. Is foreign direct investment (FDI) helping to build the stock market by serving as a complement to existing investors or as a substitute for them? FDI to stock market growth link serves as a supplement for this and is, therefore, regarded an important aspect of the market. In other words, if the two markets have an inverse relationship, foreign direct investment (FDI) could be utilized to fill the void that has been created by the reduction in value of the stock market. As is usual in research, the findings are split into parts. In the second section, you will get an overview of the literature on the factors that influence the development of the stock market. The third section describes the fundamental characteristics of Germany's stock markets. The fourth section contains a detailed description of the method, as well as the model and data. Following that, the fifth section discusses the results, and sixth section closes with a few policy considerations.

## Literature Review

Several studies published in the "economics literature" have found a connection between stock market development and economic growth. A well-organized and managed stock market generates investment possibilities in a nation by finding and funding productive initiatives that, in turn, result in increased economic activity over the long term. It also enables the effective allocation of capital, the mobilization of domestic savings, the diversification of risks, and the interchange of commodities and services, among

other things [1]. "Direct investment" is used to describe a business arrangement in which one country's citizen or company has bought out a firm in another country. This is defined by the IMF and the OECD as a long-term acquisition of a majority stake in a firm by a company or individual in one country where the other country is where the company or individual who is doing the investing resides (the direct investment enterprise). In other words, a "lasting interest" is defined as a long-term relationship with an investor, as well as control over a direct investment company' management. When trading firm stock (shares) and derivatives, the stock market, also known as an equity market, is a public place where these assets may be traded openly or privately at a fixed price. When we talk about the stock market, we're talking about the organized trading of equities via exchanges and over-the-counter marketplaces. A stock market, as previously described, is a market for trading stocks that are publicly traded on the stock exchange as well as stocks that are sold privately at a price between private organizations or individuals.

The stock market will benefit from the establishment of a favorable investment environment, which promotes FDI. The researchers Sawkut, Wahid, and Seetanah have all investigated what makes foreign direct investment occur. The research findings show that nations that are more welcoming to foreign direct investment are often less hazardous for investment, have solid institutions, and foster market growth. There is a strong relationship between FDI and stock market growth, according to Kalim [2,3] and Adam and Tweneboah. Several hypotheses have been advanced to explain why foreign direct investment (FDI) flows from developed to poor nations. These ideas cross the boundaries between macroeconomics and microeconomics. In theory, there is no obvious connection between foreign direct investment and the growth of the stock market. One school of thought thinks that the connection is complimentary, while the other believes that it is substitutable (or interchangeable). On the one hand, it is said that foreign direct investment (FDI) is more likely to go to riskier, less developed, and institutionally weak nations. This school of thought views foreign direct investment (FDI) as a replacement for capital market investment that happens in order to compensate for the disadvantages of investing via capital markets when shareholders' rights are infringed. According to this viewpoint, foreign direct investment (FDI) should be linked with a decline in the growth of stock markets. On the contrary, it is expected that foreign direct investment (FDI) would go to nations with strong institutions and sound macroeconomic fundamentals, thus assisting in the expansion of the local financial sector. Claessens, Klingebiel, and Schmukler [4] investigate whether FDI is regarded as more desirable solely for its ability to overcome investment obstacles through capital markets, or whether FDI is regarded as more desirable solely for its ability to overcome investment obstacles

through capital markets. They find that FDI is more desirable solely for its ability to overcome investment obstacles through capital markets. The researchers discovered a statistically significant positive connection between FDI and stock market development from 1975 to 1999 by using a regression method.

An apparently unrelated regression model was used by Adelegan to examine the effect of foreign direct investment on Nigerian economic development. He found that foreign direct investment is pro-consumption, pro-import, and adversely linked to GDP. In Nigeria's economy, according to Akinlo, foreign money has statistically insignificant impact on the country's economic growth. It has long been believed that the stock market is an accurate gauge of an economy's growth and strength. Furthermore, in recent years, the value of stocks, the market capitalization, and the number of trades have all increased significantly. Stock exchanges were established in order to channel money to investment companies. With the exception of Raza, Iqbal, and Ahmed, no study is being conducted in Pakistan to examine the effect of FDI on stock market development. While few research articles have looked at the relationship between stock prices and macroeconomic variables, the link between the two has been the topic of a small number of research studies (i.e. consumption, investment, gross domestic product, index of industrial production). Macroeconomic variables were linked to stock prices in the banking industry according to Husain and Mahmood. Nishat and Shaheen said that the connection between industrial production and stock prices is bi-directional. The effect of foreign direct investment on the stock market capitalization was investigated by Kaleem and Shahbaz during the period 1971 to 2006. When an Error Correction Modeling (ECM) approach and an Auto regressive distributed lag (ARDL) bound testing strategy were used in conjunction with each other, the researchers discovered that foreign direct investment has a positive and statistically significant effect on stock market capitalization in both the long and short term. Using a panel VAR model, Kim and Yang [5] examined the effect of capital inflows on asset prices in the United States. According to the findings of the research, capital inflows supported asset price appreciation, while shocks to capital inflows explained only a tiny portion of changes in asset prices.

In his investigation, Zafar researched the relationship between foreign direct investment and the Pakistani stock market's development from 1988 to 2008. It was found that there was a large positive relationship between the two variables, as shown by the study results. In a research project done from 1976 to 2011, Syed [6,7] investigated the results of foreign capital inflows and growth in Pakistan's stock market and found a correlation between the two. Foreign direct investment, worker remittances, and economic growth all showed a strong and substantial positive correlation with stock market capitalization in both the long and short term, according to the data uncovered through the application of ARDL

bound testing co-integration. According to Singh and Weisse, there is a positive connection between the establishment of stock exchanges, the movement of money, and long-term economic development in emerging nations. According to the findings of the study, stock market expansion and portfolio capital inflows are unlikely to assist developing and emerging countries in their efforts to achieve quicker industrialization and longer-term economic growth in an age of financial deregulation. Development and emerging market countries should encourage the use of bank-based systems, influence the quantity and composition of capital inflows, and prevent the development of a corporate control market, according to the findings of the research. Nyangoro investigated the connection between the performance of the Kenyan stock market and the movements of foreign portfolio holdings. Foreign portfolio flows have a substantial and beneficial effect on domestic stock market returns, according to the findings of the research. It was also found that stock market returns are influenced by lagged unanticipated foreign portfolio flows rather than their contemporaneous value.

## Data and Methodology

The main essence of this study is to examine the relationship FDI on Germany's stock market development. In order to do this, the researchers utilized a time series regression method to examine the connection and its consequences. The extent to which FDI and stock market development are linked was the subject of the research. Other variables, such as inflation and the exchange rate, as well as saving, were included into the regression since they are believed to have a significant impact on the development of the economic stock market, according to the results of the multiple regression analysis conducted. Multivariate regression is a statistical technique that is used to determine the connection between a large number of independent variables and one single dependent variable. In order to conduct the study, the researcher relied only on secondary sources of information, which included the World Bank's World Development Indicators. Data from 1980 to 2019 were utilized due of the availability of historical data.

### The variables that were assessed were as follows

- The stock market's development is represented by the market capitalization (MC) in relation to the GDP. In contrast to other market indicators, market capitalization is a more trustworthy gauge of the health of the stock market since it represents the value of all publicly traded shares. Previously, it has been used in research studies.
- The inflation rate (INF) - is another indicator of macroeconomic stability, and it is one of the most important macroeconomic factors that influence the stock



market choices of international investors. It has been used in previous stock market research to denote yearly percentage changes in consumer prices, and it is an acronym for this measure. Evidence suggests that inflation has a major impact on the growth of the stock market, as shown by empirical research. Economic volatility (inflation change) increases as the economy becomes more volatile, reducing the incentives for businesses and investors to engage in the stock market, and vice versa.

- Foreign Direct Investment (FDI) - This metric measures direct equity inflows into the reporting economy from other countries. In the case of a corporation, it is the total of its equity, profits reinvestment, and other capital. Most FDI research use foreign direct investment (FDI) inflow as a percentage of GDP to proxy for it.
- Domestic Savings (SAV): The stock market benefits from domestic savings, which helps to stimulate economic growth. It also raises the amount of investment while simultaneously increasing the quality of that investment. According to Liu and Garcia, higher domestic savings lead to a rise in capital inflows via stock markets, which is beneficial to the economy. A significant positive connection exists between domestic savings and the growth of the stock market, according to Kalim and Shahbaz, Yartey, and Liu and Garcia [8,9]. As a proxy for Domestic Savings (SAV), we utilize Gross Domestic Savings (in current US dollars) as a measure of Stock Market Development, and we expect Domestic Savings (SAV) to have a positive impact on SMD.
- As real effective exchange rate (REER) shift may lead to stock market price fluctuations, as international investors shy away from participating in markets in countries whose currencies are devaluing due of risk. The German economy's stability is gauged based on the exchange rate between the euro and the US dollar, since the rate may shift based on currency volatility and investor risk. The exchange rate has a detrimental impact on the Standard Method of Design (SMD) according to Subair and Salihu and Dimitrova. One measure of a local currency's worth is the local currency's exchange rate per US dollar (ER). People anticipate things to become worse.

### Descriptive statistics variables

The descriptive statistics of the variables for the model under consideration is presented in the (Table 1). There is a total of 40 observations in this set.

Specification of the model

The main objective of this research is to detect and assess the impact of foreign direct investment (FDI) on emerging stock markets. As previously mentioned, increasing Foreign Direct Investment into a country such as Germany is considered to be beneficial to the growth of the country's stock market. We will utilize the equation-based model shown below to investigate the impact of foreign direct investment on the growth of the stock market, as well as the real effective exchange rate, domestic savings, and inflation rate.

In the equation,  $\ln(MC) = \beta_0 + \beta_1 \ln(FDI) + \beta_2 \ln(SAV) + \beta_3 \ln(REER) + \beta_4 (INF) + U$

Where MC denotes Market Capitalization/Stock Market Development, and

FDI is an abbreviation for Foreign Direct Investment.

SAV is an abbreviation for Domestic Savings.

REER is an abbreviation for Real Effective Exchange Rate.

INF stands for Inflation Rate.

Both augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) experiments were employed as two-unit root tests in this study. The selection of these measurements was driven by the need of high contrast and precision. In the opinion of Hamilton, the PP unit root test is more reliable than the ADF because it is more resistant to serial correlation and heteroscedasticity. However, it has its own set of disadvantages as well as advantages. Additionally, the suggested autoregressive distributive lag (ARDL) system developed by Pesaran and colleagues will be assessed using a new estimating technique known as bounds testing.

## Empirical Results and Discussion

### Unit root test

When it comes to economic time series, determining unit roots is critical and has been well-documented and discussed in academic literature. In the case of series data, the existence of a unit root would have significant consequences for modeling and our knowledge of how economic systems react to shocks. As a consequence, detecting its existence would be very important. The stability of the model variables, as well as the validity of the standard test statistics (T-statistic and F-statistic), and the reliability of the R2 coefficient, must be shown in order to prevent false regression. This may be accomplished via proper differencing, and the number of differencing operations is referred to as the order of integration (OI). The Phillips-Perron (PP) and Augmented Dickey-Fuller (ADF) tests are used to determine the unit root of a given unit root. All of our analyses are conducted using the E-views software. In order to establish stationarity at level and first difference, the variables in (Table 2) were submitted to the unit root test, which was performed using Phillip-Perron test statistics and the Augmented Dickey Fuller test (ADF). If you use

the unit root calculation, you will see that foreign direct investment and stock market development are both stationary at the level and first difference. This shows the presence of a unit root in the given situation. The findings of the unit root test are presented in the table 2, and indicate that foreign direct investment and stock market development are stationary at the 5 percent level of significance and that the first difference is stationary at the level of significance.

This implies that the null hypothesis, which states that there is no unit root in the variables at the level and first difference, has been rejected. Thus, the variables of orders  $I(0)$  and  $I(1)$  are integrated, demonstrating that the variables satisfy the criteria for co-integration. As a result, it is possible to assess the co-integration of the various variables (Table 3).

**Table 1:** Descriptive statistics.

	FDI	INFL	MC	SAV	REER
Mean	1.595763	1.924826	44.14389	24.43088	104.7307
Median	1.352724	1.730367	43.40340	24.67089	105.7753
Maximum	12.73150	5.451189	95.58685	28.15103	121.2189
Minimum	-0.725155	-0.489389	14.75941	19.17953	92.52829
Std. Dev.	2.174763	1.357225	16.06219	2.428171	6.727439
Skewness	3.429042	0.916456	0.561511	-0.602370	0.259196
Kurtosis	18.28932	3.520029	4.340355	2.652520	2.690075
Observations	40	40	40	40	40

Source: Authors' findings

**Table 2:** Unit Root Test.

Variables	Test	T- statistics	P-value	T- statistics	P- value	Order of Integration
		Level	1 <sup>st</sup> Difference			
MC/ SMD	ADF	-3.063921	0.0378	-7.277276	0.0000	1(0)
	P-P	-3.024104	0.0413	-7.449414	0.0000	1(0)
INF	ADF	-3.268830	0.0234	-7.321375	0.0000	1(0)
	P-P	-3.244942	0.0248	-7.321375	0.0000	1(0)
FDI	ADF	-3.964120	0.0039	-8.842306	0.0000	1(0)
	P-P	-3.999821	0.0036	-11.33926	0.0000	1(0)
SAV	ADF	-1.685114	0.4307	-7.124214	0.0000	1(1)
	P-P	-1.426734	0.5594	-8.632628	0.0000	1(1)
REER	ADF	-1.836894	0.3577	-6.267759	0.0000	1(1)
	P-P	-1.940976	0.3108	-6.310064	0.0000	1(1)

Source: Authors' findings

**Table 3:** ARDL Bound Test.

Null Hypothesis: No levels relationship				
Test Statistic	Value	Signif.	I (0)	1(1)
Asymptotic: n=1000				
F-statistic	2.462937	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Authors' findings

**Table 4: Long-Run ARDL.**

Variable	Coefficient	Prob.
FDI	1.58	0.06
INF	-10.62	0.02
ER	-1.51	0.08
SAV	5.74	0.03
C	-85.30	0.26
Source: Authors' findings		

**Table 5: Short-Run ARDL.**

Variable	Coefficient	Prob.
D(FDI)	1.58	0.09
D(INF)	-10.62	0.00
D(ER)	-1.5	0.01
D(SAV)	3.58	0.04
ECT(-1)	-0.57	0.00
Source: Authors' findings		

**Table 6: Residual Diagnostic Tests.**

Name of the Test	Null Hypothesis result	Statistics value	Probability
Seria Correlation Test	No serial correlation at up to 2 lags	1.193592	0.3367
Jarque-Bera (JB) Test	Residuals are not normally distributed	2.393016	0.302248
White (CH-sq) Test	No conditional heteroskedasticity	0.429673	0.9610

The Bound Test, which is based on the ARDL technique, was used to determine whether or not there was co-integration in the data set under consideration. The null hypothesis must be rejected if the test statistic falls below the lower bound (critical values for I (0)). In this case, we infer that the variables are not co-integrated. The alternative hypothesis of variable co-integration is eliminated from consideration if, on the other hand, the statistic exceeds the upper bound (I (1)). As a result, if the test statistic falls within the test's range of possibilities, the test is considered inconclusive. The test statistic value (2.462937) shows that we can reject the null at 10% significance level and there is long run relationship between the independent variables and dependent variable. Table 4 Data shows that the probability of stock market's reaction to FDI is not statistically significant (Table 4). FDI, on the other hand, has a positive coefficient. This suggests that, in the long run, FDI acts as a supplement rather than a substitute for stock market capitalisation. This indicates that when stock market capitalisation rises, FDI rises by 1.58 % over time. This indicates that, in the long term, FDI serves as a compliment rather than a complement for stock market capitalization. This outcome may be attributed to the

stock market's solid institutional foundation. Knowledge the development of the stock market over time requires a thorough understanding of exchange rates. The growth of the stock market is helped by the fluctuation of the exchange rate. Exchange rate stability changes have a much larger effect on the stock market than they do on the economy. In the previous example, a decrease in the development of the stock market would be caused by a decrease in the exchange rate. The relationship between the behavior of the exchange rate and the growth of the stock market is greater. A percentage change in the exchange rate causes a greater than proportional movement in the direction of the stock market's growth.

Table 5 illustrates how foreign direct investment (FDI/SMD) has an effect on the growth of the stock market (Table 5). The alternative hypothesis that foreign direct investment has positive connection with stock market growth and open up new avenues for stock market development has been validated. Data shows that the probability of stock market's reaction to FDI is not statistically significant. FDI, on the other hand, has a positive coefficient. An increase in the market capitalization will lead to an increase of 1.58

in the coefficient of foreign direct investment. In the long term, FDI also has a significant beneficial effect on the growth of the stock market. The connection between foreign direct investment and stock market growth is governed by two fundamental ideas: the complementary hypothesis and the substitute hypothesis. The results show that the complementary theory is supported in the short term, as previously stated. This indicates that foreign direct investment (FDI) serves as a compliment for stock market growth

rather than as a substitute to it. According to the data in (Table 6), there is no serial correlation, no conditional heteroskedasticity, and no normal distribution in the residuals. In fact, there is no normal distribution in the residuals. The structural stability of regression coefficients is assessed using the cumulative sum (CUSUM) test. This test, as shown in (Figure 2), is inside 5% critical constraint, indicating that the model is stable [10-19].

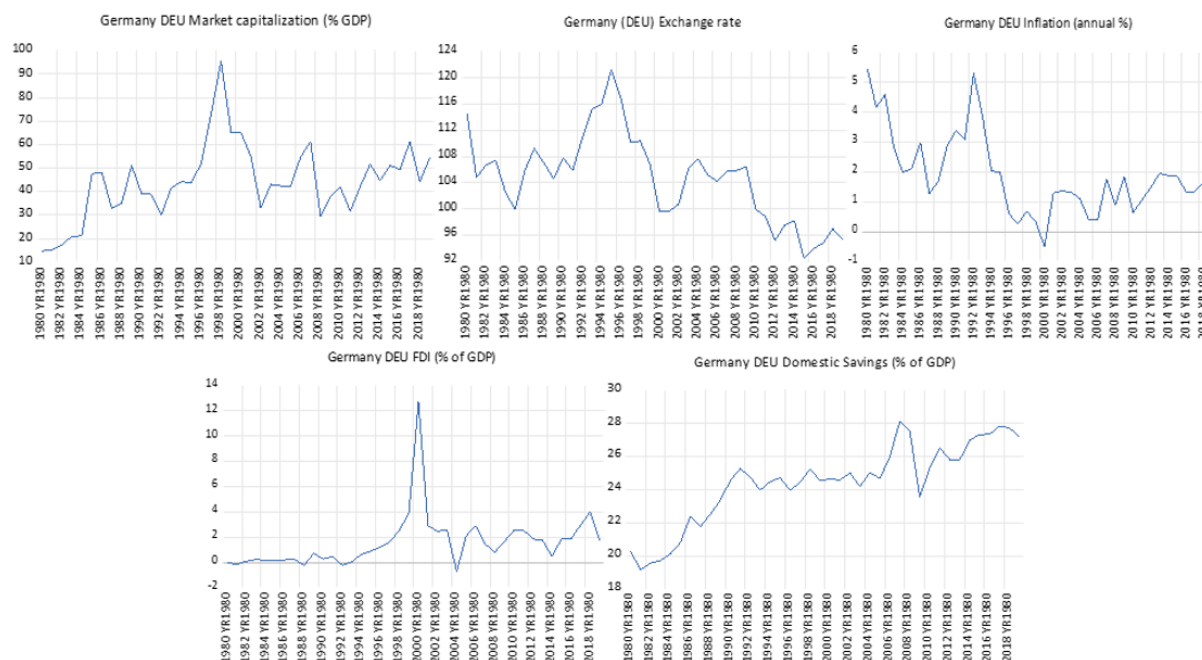


Figure 1: Graph of variables, Source: World Development Indicators.

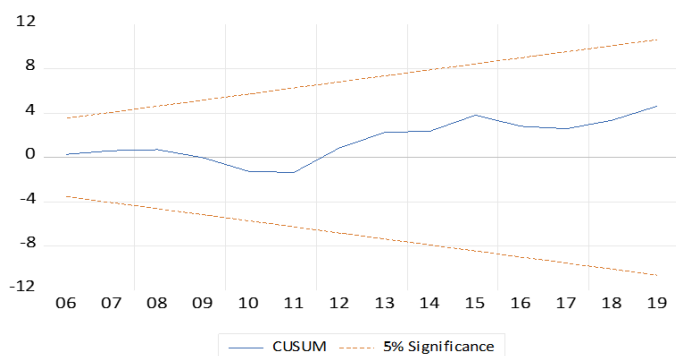


Figure 2: CUSUM Test, Source: Authors' findings.

## Conclusion

Due to the fact that each country has its own set of characteristics, the study sought to determine whether or not foreign direct investment and stock market growth are linked in Germany. Other important factors in our research, in addition to foreign direct investment (FDI), which serves as our main independent variable,

are domestic savings, the foreign exchange rate, and inflation, to name a few. The ARDL model with bound testing technique, rather than the conventional Johansen co-integration research, was used in order to capture both long-run co-integration and short-run dynamics of the connections, and yearly time series data were utilized to gather the data from 1980 to 2019. Foreign direct investment (FDI) has a complement effect on the development of the stock market in the short and long term. This shows that the growth of the German stock market is little influenced by foreign direct investment (FDI).

It is important to note that the stock market is an integral part of today's market-based economic system since it is the main means of moving money from depositors to borrowers. For the German government to effectively promote foreign direct investment, a variety of measures should be implemented, including ensuring political stability in the country, adequate infrastructure development, attempting to reduce volatility of foreign exchange and interest rates through appropriate and effective



macroeconomic policy, tax breaks, such as tax-exempt status, and infrastructure investment.

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